

Orthogonal Frequency Division Multiplexing System With Differing Control Parameters
Corresponding To Different Data Points In A Single Symbol

ABSTRACT OF THE DISCLOSURE

[0055] A wireless transmitter (TX₁). The transmitter comprises circuitry for providing a plurality of control (CONTROL) bits and circuitry for providing a plurality of user (USER) bits. The transmitter also comprises circuitry for modulating (16) the plurality of control bits and the plurality of user bits into a stream of complex symbols and circuitry (18) for converting the stream of complex symbols into a parallel plurality of complex symbol streams. The transmitter also comprises circuitry (20) for performing an inverse fast Fourier transform on the parallel plurality of complex symbol streams to form a parallel plurality of OFDM symbols and circuitry (22) for converting the parallel plurality of OFDM symbols into a serial stream of OFDM symbols. Each OFDM symbol in the serial stream of OFDM symbols comprises a plurality of data points, and selected (SF_{2,x}) OFDM symbols in the serial stream of OFDM symbols carry modulation information (AMOD). The modulation information in one or more of the selected OFDM symbols comprises a plurality of modulation groups, and the plurality of modulation groups comprises a number of modulation parameters that describe modulation of a corresponding set of data points in a subsequent OFDM symbol in the serial stream of OFDM symbols.